

IN THE ABSTRACT:

Please replace the abstract of the invention with the following Abstract on the next page:

ABSTRACT

A linear acceleration system comprises one or more accelerating stages along an axis and a unipolar electrostatic quadrupole lens in series with the one or more accelerating stages. The unipolar electrostatic quadrupole lens focuses an ion beam in a direction transverse to the axis. The unipolar electrostatic quadrupole lens includes a switching circuit, a first pair of electrodes, and a second pair of electrodes. The switching circuit controllably connects to ground and a first voltage potential. The electrodes of the first pair are located opposite each other and are connected to the switching circuit. The electrodes of the second pair are also located opposite each other and connected to the switching circuit. The second pair of electrodes are biased to a second voltage potential.